CAN4

IS PRIOR COMMUNITY ANTIBIOTIC TREATMENT OF PATIENTS HOSPITALISED WITH LOWER RESPIRATORY TRACT INFECTION ASSOCIATED WITH REDUCED IN-HOSPITAL MORTALITY AND LENGTH OF STAY?

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BACKGROUND: A previous study (Davey et al, Value in Health 1999, 2:333–341) suggested that prior community antibiotic therapy is associated with reduced in-hospital mortality. **OBJECTIVES:** To confirm the original finding in a larger study and to test the hypothesis that patients who received prior antibiotic treatment would also have lower hospital length of stay. **METHODS:** Patients with hospital discharge codes including lower respiratory infections (LRTI) or chronic obstructive airways disease (COAD) were identified at three acute hospitals from ICD9 codes in the Scottish Morbidity Records (SMR) for 1993 to 1995. Patients with episodes starting >48h after admission were excluded because they were likely to have nosocomial pneumonia. Prior antibiotic treatment was defined as any treatment in the 28 days before hospitalization. **RESULTS:** There were 1285 patients with LRTI alone and 1603 with COAD of whom 366 also had LRTI. Antibiotic treatment occurred before hospitalization in 35% of patients with LRTI alone and 41% of patients with COAD. Patients with LRTI alone who received community antibiotics were less likely to die in the 50 days after admission: relative risk 0.73 (95% CI 0.61–0.87) unadjusted and 0.83 (0.69–1.00) adjusted for age, sex and social deprivation. There was no difference in 50 day mortality between COAD patients who did or did not receive community antibiotics. Age was the only variable that was significantly associated with length of stay in the LRTI patients. Length of stay was not different for patients who received community antibiotics, either in the entire cohort ($P = 0.25$) or in the 832 patients who were discharged alive ($P = 0.81$). **CONCLUSION:** This study confirmed that community antibiotic treatment is associated with reduced 50 day mortality for patients admitted with LRTI, but not COAD. However, there was no significant association between community antibiotic treatment and length of hospital stay.

Cost-Effectiveness/Cost-Benefit Analyses CEB (Session 1)

CEB1

PHARMACOGENOMICS: EVALUATING THE ECONOMIC IMPACT

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OBJECTIVE: Pharmacogenomics, the individualization of drug therapy based on genetic information, promises to change the clinical use of therapeutics and influence the drug development process, however the potential clinical and economic outcomes of pharmacogenomics is not clear. Our objective is to develop a framework for evaluating the cost-effectiveness of genetic-guided drug therapy. **METHODS:** We reviewed examples of currently practiced non-genetically based individualization of drug therapy. These examples were classified into two categories: dose modification and drug selection. The costs, response characteristics, and implementation strategy for the tests were evaluated. We also evaluated the therapeutics and diseases for which these tests were used to determine which characteristics led to the implementation of individualized drug therapy. We then developed a framework for evaluating the cost-effectiveness of pharmacogenomics and applied it to examples of currently debated pharmacogenomic strategies. **RESULTS:** Drug monitoring is typically employed only for drugs with a narrow therapeutic index, whereas drug selection is often employed with the use of antimicrobials, where drug effectiveness is highly dependent on diagnostic information. The economic and, importantly, the time cost are important determinates of the usefulness of testing procedures. The prevalence of polymorphisms, the penetrance of disease-related genes, and the magnitude of relative risk will also have a significant impact on the usefulness of genetic diagnostics. We found that some commonly cited examples of potential applications of pharmacogenomics do not fulfill these criteria. Our analysis suggests that drug-gene interactions such as warfarin-CYP2C9, 6-mercaptopurine-TPMT, and COX-II inhibitors-Familial Adenomatous Polyposis (FAP) have the potential to produce cost-effective results. **CONCLUSIONS:** The use of pharmacogenomics to improve the cost-effectiveness of pharmaceuticals requires careful evaluation and will not be useful in all cases.

CEB2

COST-EFFECTIVENESS OF MENINGOCOCCAL VACCINE IN THE UK

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OBJECTIVE: Conduct cost-effectiveness analysis of vaccinating children in the UK under one year or aged 1 to 4 years against meningococcal serotype C disease. **METHODS:** A model was developed to estimate the number of cases and deaths avoided and years of life gained over a lifetime. The incidence of disease was based upon meningococcal disease reported in the UK and assumes 34% is serotype C. The vaccine efficacy was assumed to be 90% based on clinical evidence. Estimated direct medical resources consumed in the acute management of meningococcal disease, acute, and short-term sequelae were obtained from physician opinion. The costs associated with the management of hearing loss, cerebral palsy, seizures, and mental retardation over the long term were obtained